

U.S. Department of the Interior  
Bureau of Land Management  
White River Field Office  
73544 Hwy 64  
Meeker, CO 81641

## ENVIRONMENTAL ASSESSMENT

**NUMBER:** CO-110-2004-19-EA

**CASEFILE/PROJECT NUMBER** (optional): COC-9226

**PROJECT NAME:** 36-21D, 36-22

**LEGAL DESCRIPTION:** T2N R97W Sec 36 SENW

**APPLICANT:** Tom Brown Inc.

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:**

**Proposed Action:** Tom Brown Inc (TBI) proposes to develop two 6500-foot deep gas wells (36-21D and 36-22). 36-21D will be a directional well drilled from the same well pad as 36-22. Therefore, only one access road and one pipeline are needed. The proposed access road will be 1625 feet long. The access road will be a 30-foot wide disturbance, crowned, ditched, graveled as needed, with a grade of less than 8%. Culverts will be used if requested by the BLM. No range management fences will be encountered. A pipeline is proposed to be built next to the proposed access road, 228 feet to the nearest tie in point. Disturbance from pipeline installation will be adjacent to the access road. The drill pad will be 220 by 340 feet with a maximum cut/fill of 20 feet. The reserve pit will be lined to prevent leakage and fenced "stock tight" on three sides. The fourth side will be fenced when the rig is released. The pit will be allowed to dry before they are back filled. The liner will be buried on site.

The opportunity for Superfund Amendments and Reauthorization Act (SARA) listed Extremely Hazardous Substances (EHS) at the sites is generally limited to proprietary treating chemicals. All hazardous substances, EHS, and commercial preparations will be handled in an appropriate manner to minimize the potential for leaks or spills to the environment.

All equipment and traffic will be confined to the area specified in the application for permit to drill (APD).

All soil material will be placed in an area where it can be retrieved. The drill pad and reserve pit will be designed to prevent the collection of surface runoff.

Topsoil, down to six-inches, will be stockpiled.

Waterbars will be constructed as per BLM standards.

In the event of a dry hole, the location will be re-contoured and the topsoil will be distributed evenly over the entire location. The location will be disked; the seed will be drilled followed by cultivation. Steep slopes will be broadcast seeded at twice the specified rate. Certified seed will be used with a minimum germination rate of 80% and minimum purity of 90%. Seeding will take place after September 15<sup>th</sup> or before May 15<sup>th</sup>. Weeds will be controlled in conformance with EPA and BLM guidelines.

In the event of production, those areas not needed for operations will be re-contoured and water barred to support vegetation and reduce erosion. Partial or complete rehabilitation will begin upon well completion, when the pit dries out and when weather permits.

TBI will be responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites or for collecting artifacts. If historic or archaeological materials are uncovered, TBI will suspend all operations that might further disturb such materials and immediately contact the Authorized Officer. Within five (5) working days the Authorized Officer will inform TBI as to what mitigation measures are appropriate.

If TBI wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, TBI will assume responsibility for whatever recordation and stabilization of the exposed materials may be required.

The Authorized Officer will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Authorized Officer that the required mitigation has been completed, TBI will then be allowed to resume construction. There will be no trees or sage brush affected by this project. Total disturbance will be 3.25 acres.

**No Action Alternative:** No wells would be developed. No well pads, access roads, or pipeline would be constructed.

#### **ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD:**

**NEED FOR THE ACTION:** Applicant has requested approval of this action in accordance with his federal mineral lease.

**PLAN CONFORMANCE REVIEW:** The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Page 2-5

Decision Language: “Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values.”

**AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES /  
MITIGATION MEASURES:**

**STANDARDS FOR PUBLIC LAND HEALTH:** In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

**CRITICAL ELEMENTS**

**AIR QUALITY**

*Affected Environment:* There are no special designation air sheds or non-attainment areas nearby that would be affected by the proposed action. During periods of low precipitation, air quality in the area of the proposed action is often diminished by dust caused by human disturbance.

*Environmental Consequences of the Proposed Action:* The proposed action would result in short term, local impacts to air quality during and after construction, due to dust being blown into the air. After adequate vegetation is reestablished, blowing dust should return to pre-construction levels.

*Environmental Consequences of the No Action Alternative:* No increase in dust will occur.

*Mitigation:* The applicant will spread water on road surfaces to control fugitive dust.

**AREAS OF CRITICAL ENVIRONMENTAL CONCERN**

*Affected Environment:* This area is not within a designated ACEC.

*Environmental Consequences of the Proposed Action:* None

*Environmental Consequences of the No Action Alternative: None*

*Mitigation: None*

## **CULTURAL RESOURCES**

*Affected Environment:* The proposed well pad location, access road route and well-tie pipeline route has been inventoried at the Class III (100% pedestrian) level, Slaughter and Pennefather-O'Brien 2003, Compliance Dated 11/28/2003) with one newly recorded isolated find, 5RB 4692 located in the ten acre inventory area for the well pad.

*Environmental Consequences of the Proposed Action:* Provided all mitigation measures are strictly adhered to there will be no impacts to cultural resources.

*Environmental Consequences of the No Action Alternative:* There would be no new impacts to cultural resources under the No Action Alternative.

*Mitigation:* The isolated find shall be avoided by all well pad construction and maintenance activity. Also:

1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by

telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

**INVASIVE, NON-NATIVE SPECIES/RECLAMATION:** (This includes vegetative information related to Public Land Health Standard 3.)

*Affected Environment:* The project is on relatively droughty site due to soil texture (clays) and high salt content. The native plant community consists of sagebrush, shadscale, winterfat, and western wheatgrass. On this site non-native grass species have out-performed native species in ground cover and ability to stabilize soils.

*Environmental Consequences of the Proposed Action:* The BLM proposed seed mix contains a variety of native and non-native plant species. This seed mix is appropriate to the area and should provide good reclamation. The non-native species proposed are not expected to move off site and compete with the adjacent native plant communities. Reclamation as proposed in the APD is suitable for this project.

*Environmental Consequences of the No Action Alternative:* No impacts.

*Mitigation:* Use Standard Seed Mix #2 for reclamation.

**NOXIOUS WEEDS:** (This includes vegetative information related to Public Land Health Standard 3.)

*Affected Environment:* Weeds of concern in the area of the proposed action are bull, musk and Canada thistles, and spotted, diffuse and Russian Knapweeds. All of the thistle species can be found in the area and are expected to invade on the disturbed soils. No knapweed species have been found in the immediate area, although Russian and spotted have been found in the Indian Valley area to the North.

*Environmental Consequences of the Proposed Action:* Disturbance of vegetation communities and soils will create suitable habitat for noxious weed establishment. If weed control is affected early on (see mitigation below) the cost and effort in weed control by the permittee will be minimized, and negative impacts on the adjacent rangelands will be prevented.

*Environmental Consequences of the No Action Alternative:* There would be no noxious weeds impacts associated with this alternative.

*Mitigation:* The permit holder is required to control noxious weeds resulting from construction and use activities. Application of herbicides must be under field supervision of an EPA-certified pesticide applicator. Herbicides must be registered by the EPA and application proposals must be approved by the BLM.

## MIGRATORY BIRDS

*Affected Environment:* Non-game populations associated with these ranges are widespread and common throughout juniper and sagebrush habitats found in this Resource Area (e.g., green-tailed and spotted towhee, vesper and lark sparrows, golden-mantled ground squirrel). Because woodlands associated with this project are very young (recent encroachment), the non-game community has little affinity to woodland habitats. There are no specialized or narrowly endemic species known to occupy the project area.

*Environmental Consequences of the Proposed Action:* The proposed location, pipeline, and access would involve about 1.4 acres of upland sagebrush and 1.4 acres of early-seral juniper woodland (i.e., regeneration on the perimeter of a sagebrush park; no indications that mature stand ever supported). The pad and access/pipeline route have been sited to minimize involvement of the sagebrush community (see discussion in terrestrial wildlife section below). Although this action represents an incremental and longer term reduction in the extent of sagebrush habitat available for migratory bird breeding functions, its diminutive size and position on the margin of the sagebrush park reduce its functional effect to inconsequential proportions. Implementation of this project would have no measurable influence on the abundance or distribution of breeding migratory birds even at the smallest landscape scale.

*Environmental Consequences of the No Action Alternative:* Incremental reductions of sagebrush, as forage and cover for non-game wildlife, would not occur at this time or place.

*Mitigation:* None.

## THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

*Affected Environment:* This proposal is situated on a minor drainage less than 0.25 mile from the White River. This site is at the upper end of riverine habitat (i.e., the river and its 100-year floodplain) designated as critical habitat for Colorado pike-minnow. At the present time, occupation of the river by fish is confined to the river below Taylor Draw dam, about 41 river miles and 6 reservoir miles downstream of the project site. There are no additional special status species that occupy or derive important benefit from the project locale.

*Environmental Consequences of the Proposed Action:* On-pad storage of fluids in an earthen pit or tanks is associated with drilling operations and production (primarily composed of saline water). There are sufficient regulatory (i.e., design and emergency protocol, compliance monitoring) requirements for the development of federal oil and gas wells such that there is no reasonable likelihood of unintended escape of fluids from the pad. A worst-case scenario would involve a short-term release of brackish water to the river. However, because of the small potential quantities of water involved, the rapid dilution effect of the river, and distances

necessarily traveled prior to entering occupied fisheries, such an event would be incapable of adversely influencing water quality or habitat conditions below Taylor Draw dam.

*Environmental Consequences of the No Action Alternative:* Natural gas well development would not occur at this time or place. Alternate well locations within the White River watershed would have the same potential for introducing saline waters into the river as that associated with the proposed action.

*Mitigation:* None required

*Finding on the Public Land Health Standard for Threatened & Endangered species:* The proposed and no-action alternative would have no conceivable affect on the suitability of habitat or the demographics and distribution of Colorado pike-minnow populations in the White River.

#### **THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES (includes a finding on Standard 4)**

*Affected Environment:* No Threatened or Endangered plant species are present in the vicinity of, or will be affected by the proposed action

*Environmental Consequences of the Proposed Action:* None

*Environmental Consequences of the No Action Alternative:* None

*Mitigation:* None

*Finding on the Public Land Health Standard for Threatened & Endangered species:* Since no threatened or endangered plant species habitat will be affected by the proposed action, this standard does not apply.

#### **WASTES, HAZARDOUS OR SOLID**

*Affected Environment:* There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at this site.

*Environmental Consequences of the Proposed Action:* No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated.

*Environmental Consequences of the No Action Alternative:* No hazardous or other solid wastes would be generated under the no action alternative.

*Mitigation:* The operator shall be required to collect and properly dispose of any solid wastes generated by this project.

## **WATER QUALITY, SURFACE AND GROUND** (includes a finding on Standard 5)

*Affected Environment:* Well locations are on an un-named tributary to the White River and are in segment 7, which is the mainstream of the White River from the confluence with Miller Creek to a point immediately above the confluence with Piceance Creek. The State has classified this stream segment as Cold Aquatic Life 1, Recreation 1a, March 1 through November 30, Recreation 1b, December 1 through February 28, Water Supply and Agriculture. The state has further defined water quality parameters with table values. These standards reflect the ambient water quality and define maximum allowable concentrations for the various water quality parameters. The anti-degradation rule applies to this segment meaning no further water quality degradation is allowable that would interfere with or become harmful to the designated uses.

*Environmental Consequences of the Proposed Action:* Annual runoff from these types of watersheds is dynamic and dependent on some aspects we control, such as the amount of vegetation retained for watershed protection and vegetation density. Depleting the vegetation cover needed to protect watersheds from raindrop impact and runoff could cause short-term erosion problems and increased sedimentation to the White River watershed until successful best management practices have been implemented and proven to be successful. The magnitude of these impacts is dependent on the amount of surface disturbance and climatic conditions during the time the soils are exposed to the elements. Water quality from these ephemeral drainages, fall well within the guidelines set by the State of Colorado.

*Environmental Consequences of the No Action Alternative:* Impacts are not anticipated from not permitting the proposed action.

*Mitigation:* Efforts need to be made to keep sediment from leaving the site with the use of best management practices designed to retain sediment. Re-vegetate the un-used portion of the well pads as soon as possible, and place gravel on areas that will not be re-vegetated. In addition, apply the following Conditions of Approval listed in Appendix B of the White River ROD/RMP to help minimize surface disturbing impacts:

4. When preparing the site, all suitable topsoil should be stripped from the surface of the location and stockpiled for reclamation once the location is abandoned. If well becomes a producing well, the topsoil pile will need to be seeded to reduce wind and water erosion. When topsoil is stockpiled on slopes exceeding five percent, construct a berm or trench below the stockpile.
6. All sediment control structures or disposal pits will be designed to contain a 100-year, 6-hour storm event. Storage volumes within these structures will have a design life of 25 years.
8. All activity shall cease when soils or road surfaces become saturated to a depth of three inches unless otherwise approved by the Authorized Officer.



24. Provide vegetative or artificial stabilization of cut and fill slopes in the design process. Avoid establishment of vegetation where it inhibits drainage from the road surface or where it restricts safety or maintenance.

35. Eliminate undesirable berms that retard normal surface runoff.

*Finding on the Public Land Health Standard for water quality:* Impacts to this watershed would *not* cause it to no longer meet the water quality standards established by the State of Colorado which is the Public Land Health Standard for water quality.

## **WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)**

*Affected Environment:* A channelized reach of the White River, along Highway 64, lies about 0.25 mile from the project. The project would have no direct involvement with any riparian or wetland community.

*Environmental Consequences of the Proposed Action:* This project would have no direct influence on riparian or wetland communities. There is no reasonable potential for indirect influences on riparian vegetation associated with the White River (see endangered species section above).

*Environmental Consequences of the No Action Alternative:* None.

*Mitigation:* None required

*Finding on the Public Land Health Standard for riparian systems:* There is no reasonable likelihood that the proposed action or no action alternative would have an influence on the condition or function of riparian or wetland habitats.

## **WILDERNESS**

*Affected Environment:* No wilderness areas are present in the vicinity of the proposed action, and none will be affected.

*Environmental Consequences of the Proposed Action:* None.

*Environmental Consequences of the No Action Alternative:* None.

*Mitigation:* None.

## CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No flood plains, prime and unique farmlands, or Wild and Scenic Rivers exist within the area affected by the proposed action. There are also no Native American religious or environmental justice concerns associated with the proposed action.

## NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

### SOILS (includes a finding on Standard 1)

*Affected Environment:* The soils have been mapped in an order III soil survey by NRCS and are available from the office for review. Refer to the table below for the type of soils at each well site.

Proposed well	Soil Number	Soil Name	Slope	Range site	Salinity	RunOff	Erosion Potential	Bedrock
36-22	53	Moyerson stony clay loam	15-65%	Clayey Slopes	2-4	Rapid	Very high	10-20
36-21D	104	Yamac Loam	2-15%	Rolling Loam	<2	Medium	Slight to moderate	>60

Revegetation limitations for these soil types include an arid climate and droughty soil condition. None of these wells have been mapped as area that has fragile soils on slopes greater than 35 %. No special designations have been assigned to their locations.

*Environmental Consequences of the Proposed Action:* There would be increased erosion and sedimentation from overland flows, due to removal of vegetation, soil compaction, and exposure of underlying soil layers. These impacts would be short term during the construction phase and for a period after construction providing successful reclamation occurs.

*Environmental Consequences of the No Action Alternative:* Impacts from not permitting the proposed action are not anticipated.

*Mitigation:* Apply the following COAs from Appendix B of White River ROD/RMP:

96. Water bars or dikes shall be constructed on all of the rights-of-way, and across the full width of the disturbed area, as directed by the authorized officer.

97. Slopes within the disturbed area shall be stabilized by non-vegetative practices designed to hold the soil in place and minimize erosion. Vegetative cover shall be reestablished to increase infiltration and provide additional protection from erosion.

98. When erosion is anticipated, sediment barriers shall be constructed to slow runoff, allow deposition of sediment, and prevent it from leaving the site. In addition, straining or filtration mechanisms may also contribute to sediment removal from runoff

*Finding on the Public Land Health Standard for upland soils:* The areas disturbed by the proposed action would exhibit some of the indicators in Public Land Health Standard, and would probably fail to meet the public land health standards, temporarily. However, the standard applies to the overall landscape scale, and the impacts from the proposed action would not keep the landscape from meeting the guidelines in this standard.

## **VEGETATION** (includes a finding on Standard 3)

*Affected Environment:* The proposed action is located within a Rolling Loam range site upon a ridge. The dominate plant community for this site consists of big sagebrush with an understory of western wheatgrass. The outer edges of the sagebrush park located within the proposed action have been partially invaded by an early seral class of junipers.

*Environmental Consequences of the Proposed Action:* The proposed action would disturb a mid elevation - open sagebrush plant community and a partially invaded sagebrush park by juniper, for a total of 3.25 acres. The short-term soil and vegetation disturbances would be offset in the long-term by reclaiming the disturbed area with a seed mix that is suited for this ecological site. However, there is an increase probability of invasive plant communities becoming established from disturbed sites into adjacent native ranges, thus affecting the habitat's vegetative potential.

Previously this area has entailed considerable impacts from oil and gas activities from a network of well pads, pipeline corridors, and access roads, which have resulted in a reduction of available, productive range sites.

*Environmental Consequences of the No Action Alternative:* None

*Mitigation:* None

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): The proposed action would disturb a small segment of the Rolling Loam range site. However, at the landscape scale, the individual action would have no considerable impacts on plant communities as a whole, or the Public Land Health Standard.

## **WILDLIFE, AQUATIC** (includes a finding on Standard 3)

*Affected Environment:* This proposal is situated on a minor drainage less than 0.25 mile from the White River. These middle river reaches generally support a strong native fish

component, including: speckled dace, flannelmouth and bluehead sucker, roundtail chub and mottled sculpin.

*Environmental Consequences of the Proposed Action:* On-pad storage of fluids in an earthen pit or tanks is associated with drilling operations and production (primarily composed of saline water). There are sufficient regulatory (i.e., design and emergency protocol, compliance monitoring) requirements for the development of federal oil and gas wells such that there is no reasonable likelihood of unintended escape of fluids from the pad. A worst-case scenario would involve a short-term release of brackish water to the river. However, because of the small potential quantities of water involved and the rapid dilution effect of the river, such an event would likely be incapable of adversely influencing water quality or habitat conditions even at the point of release.

*Environmental Consequences of the No Action Alternative:* Natural gas well development would not occur at this time or place. Alternate well locations within the White River watershed would have the same potential for introducing saline waters into the river as that associated with the proposed action.

*Mitigation:* None.

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Vegetation and Wildlife, Terrestrial): The proposed and no-action alternative would have no conceivable affect on the suitability of habitat or the demographics and distribution of fish populations in the White River.

## **WILDLIFE, TERRESTRIAL** (includes a finding on Standard 3)

*Affected Environment:* The project area is broadly encompassed by big game winter ranges. These ranges are used by deer during the winter through early spring months and are designated by the Colorado Division of Wildlife as severe winter range. These special winter range habitats are defined as those that support 90% of the herd's population in the worst three winters of ten. Because the extent and integrity of these winter ranges are considered essential in the maintenance of deer populations in the herd unit (DAU D-7), the Division of Wildlife has categorized these ranges as critical habitat. The White River Field Office recognized these severe winter range designations and values by applying a timing limitation (WR-27) to oil and gas leases through the White River ROD/RMP. This stipulation defers surface use activities detrimental to wintering big game to periods outside the period of winter occupation. Large numbers of wintering elk are distributed extensively throughout these lower elevation juniper-sagebrush ranges during a timeframe similar to deer.

The proposed location would involve about 1.4 acres of upland sagebrush and about 1.4 acres of early-seral juniper woodland (i.e., regeneration on the perimeter of a sagebrush park; no indications that mature stand ever supported). The location is situated on the edge of a narrow 10-acre sagebrush park on a high gravel terrace above the White River that is associated with a relatively constricted (2-4 mile wide) band of lower elevation juniper-sagebrush ranges

paralleling the river valley. Small edaphic sagebrush parks rimmed by juniper woodland slopes are a unique and limited feature of critical winter habitats on the southwest margin of Game Management Unit 11. There are roughly 100 of these parks that comprise about 3% of the area's severe winter range extent (1,047 acres/30,200 acres). Consistent with the park in question, these parks are typically less than 40 acres and support a particularly favored accession of Wyoming big sagebrush and black sagebrush. These forms of sagebrush comprise the winter dietary staple of Unit 11 deer and receive consistent and inordinately high levels of use. The elevated nature of the parks with juniper slopes radiating from several directions provides integral south and west facing slopes that moderate snow depth, and yields multi-directional protection from wind and sources of wooded security and thermal cover. These forage-producing parks dispersed among woodland cover provide a landscape component that allows exceedingly efficient use of forage and cover resources in a compact area—all of which work to minimize energy expenditures (i.e., less energy devoted to movements and thermoregulation) and maximize winter nutritional condition (i.e., survival and successful gestation).

A BLM biologist surveyed the surrounding woodlands and rock outcrops on the project site for evidence of raptor nesting, but no indications of past or current nesting use was found.

#### Background:

The 36-22 proposal evolved from a need for TBI to develop a multi-hole pad to access at least 2 additional downhole locations that could not be practically accessed with conventional wells, while simultaneously minimizing adverse influences on specialized deer winter range features. This small sagebrush park was selected previously for a gravel sale, and more recently, another TBI well. Both actions were withdrawn (i.e., the well to be directionally drilled from an existing location to the north) primarily because of their long-term consequences on the utility of mule deer severe winter range.

Barring constraints associated with other resource considerations, BLM and TBI recently negotiated an informal plan whereby the BLM biologist selected well locations from TBI's 2004 development package where mid-winter construction (i.e., during the period of occupation and otherwise subject to the application of winter range restrictions in the form of a condition of approval) would involve limited animal exposure and lesser effective consequence on winter range utility (see attached memo). The two proposed wells were *not* identified as meeting this criterion. The intent of allowing certain winter developments is to defer development activity (until after April 31) on those wells that are situated in more effective winter habitats (i.e., those relatively unaffected by entrenched forms of disruptive use), such as these.

*Environmental Consequences of the Proposed Action:* Progressive occupation of these ranges by oil and gas facilities results in incremental reductions in the quantity of preferred woody forage available for deer use, and daily well monitoring and the increasingly expansive network of improved roads open for unregulated public use adds cumulatively to adverse influences associated with big game harassment and avoidance (i.e., extraneous energy demands and expenditures via elevated metabolism and otherwise unnecessary movement through snow). The siting of oil and gas facilities on these limited and exceptionally high value terrace parks aggravates these impacts to a disproportionate degree.

Based on site visits in the fall of 2003, it was determined that an access and location could be situated on the margin of the sagebrush park in section 36 that would substantially reduce long-term incremental reductions to the preferred sagebrush forage base. Although this action introduces a development that will require daily inspection, shifting of the road to the woodland margin would help minimize long-term indirect influences on the utility of the park for winter deer use, particularly from less predictable and more intrusive forms of unregulated public use (i.e., pending management of private lands that control access to the site).

Vegetation clearing and facility occupation in this case would remove about 1.4 acres of preferred woody forage base for deer for a 30+ year period (sagebrush reestablishment spans several decades after facility abandonment). Woodland removal on the site involves very young juniper regeneration. Lacking any indication of mature woodland growth, the site has apparently had a long history of sustaining a fire-induced sagebrush disclimax. By arresting advancing woodland development, this action would be expected to play a minor role in reestablishing the historic expanse of the park's sagebrush component in the long term. Reduction of this woodland expression to that of a herbaceous/sagebrush community is consistent with its historical status and should have no adverse consequence on the integrity or availability of big game security cover or non-game habitat in the project area.

If conducted during the period of big game occupation, construction, drilling, and completion activity associated with these wells would add to cumulative harassment of big game (i.e., increased energetic demands and less efficient use of available resources) on these important late winter ranges. Concentrated activity on this pad and its access may be prolonged since it is anticipated that an additional directional well would be drilled from this location.

*Environmental Consequences of the No Action Alternative:* Incremental reductions of sagebrush, as forage and cover for big game and nongame wildlife, attributable to this well, would not occur at this time or place. Alternate well locations and/or failing to incorporate directional drilling into the TBI program may be expected to expand habitat involvement and further the deterioration of habitat condition and utility on these ranges.

*Mitigation:* To reduce adverse energetic and physiological influences associated with big game avoidance and displacement during the late winter period, and consistent with TBI-BLM agreements, this pad should be constructed and the two associated wells be drilled and prepared for production outside the late winter period of January 1 to April 31. The intent and application of this condition of approval is consistent with RMP stipulation WR-27 (i.e., Big Game Severe Winter Range timing limitation; RMP TL-08).

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Vegetation and Wildlife, Aquatic): With the application of terms and conditions as indicated in this document, this project would not jeopardize the viability of any animal population. The project, individually and in the context of overall gas development in the Ant Hills Unit, would have no significant consequence on terrestrial habitat condition, utility, or function, nor have any discernible affect on animal abundance or distribution at any landscape scale – i.e. the standard.

**OTHER NON-CRITICAL ELEMENTS:** For the following elements, those brought forward for analysis will be formatted as shown above.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management	X		
Forest Management	X		
Geology and Minerals			X
Hydrology/Water Rights	X		
Law Enforcement		X	
Paleontology			X
Rangeland Management			X
Realty Authorizations	X		
Recreation		X	
Socio-Economics		X	
Visual Resources			X
Wild Horses	X		

## ACCESS AND TRANSPORTATION

*Affected Environment:* Rio Blanco County Roads 142 and 71 are the primary access routes into the eastern and western portions of the Ant Hill Unit respectively. BLM Roads 1753, 1735A, and 1754 tie together the county roads and allow access across the unit. RBC 143 breaks away from RBC 142 and runs northeast through the unit. In addition Tom Brown Inc. has constructed and maintains a number of roads that interconnect with these primary access routes or dead end at well sites.

*Environmental Consequences of the Proposed Action:* The proposed access road would connect to an existing well road, which links to RBC 71. Although the proposed access road dead-ends at the proposed well location, it may receive recreational use as the well location overlooks the White River Valley and the mouth of Piceance Creek. Since the existing and proposed access roads cross private property, use of the proposed access road could lead to incidents of trespass.

*Environmental Consequences of the No Action Alternative:* None.

*Mitigation:* None.

## **GEOLOGY AND MINERALS**

*Affected Environment:* The surface geologic formation of 36-21D and 36-22 is Quarternary Terrace (cobbles and pebbles in a sandy matrix). Gravel resources along the lower White River are limited and demand for gravel in this area is high.

Tom brown's targeted zone is in the Mesaverde. During drilling potential water, coal, oil and gas zones will be encountered from surface to the targeted zone.

*Environmental Consequences of the Proposed Action:* The cementing procedure of the proposed action isolates the formations and will prevent the migration of gas, water, and oil between formations. Although the depths of the coals prevent them from being conventionally mined the coal zones located in the Mesaverde will also be isolated during this procedure. Development of this well will deplete the hydrocarbon resources in the targeted formation.

Surface location of 36-22 and 36-21D is on a terrace gravel deposit. The well pad, road, and pipeline are situated such that approximately less than 10% of the gravel deposit located on public lands will be affected. Depending on the thickness of the deposit this could range from approximately 5,000 to 15,000 cubic yards of in-place gravel that may be affected. However the well location should not adversely affect the overall future recovery of the gravel resource.

*Environmental Consequences of the No Action Alternative:* None

*Mitigation:* None

## **PALEONTOLOGY**

*Affected Environment:* The proposed well pad would be located in an area mapped as the Wasatch Formation (Tweto 1979) which the BLM has classified as a Category I formation meaning it is a known producer of scientifically important fossil resources.

*Environmental Consequences of the Proposed Action:* It is possible that construction of the access road, well tie pipeline, well pad and excavation of the reserve/blooiie pit will impact scientifically important fossil resources, especially vertebrate fossils. This will be minimized with mitigation outlined below.

*Environmental Consequences of the No Action Alternative:* There would be no impacts to fossil resources under the No Action Alternative.

*Mitigation:* All exposed outcrops of the bedrock formation must be inventoried by a BLM approved paleontologist and a report detailing findings and any recommended mitigation shall be submitted to the BLM prior to the initiation of construction. A monitor shall be present at all times when excavating into the underlying bedrock strata when building the road, burying the well-tie pipeline and excavating the reserve/blooiie pit. If paleontological materials (fossils) are uncovered during project activities, the operator is to immediately stop activities that might



further disturb such materials, and contact the authorized officer (AO). The operator and the authorized officer will consult and determine the best option for avoiding or mitigating paleontological site damage.

## **RANGELAND MANAGEMENT**

*Affected Environment:* The proposed action is located within the south pasture of the Little Toms Draw (06603) Allotment, which is authorized for sheep use for winter and spring periods. The allotment is typically utilized by the authorized permittee for lambing operations with three bands of sheep, which are separated into three pastures within the allotment.

*Environmental Consequences of the Proposed Action:* The individual proposed action would have minimal impacts on the authorized grazing use because the amount of surface disturbance (3.25 acres) is nominal in regards to the scale of the allotments (14,355 acres). However, previously this allotment has entailed considerable impacts from oil and gas activities, which have resulted in a reduction of available rangelands and a loss of forage for grazing use.

The short-term soil and vegetation disturbances would be offset in the long-term by reclaiming the disturbed area with a seed mix that is suited for this ecological site. The soils within the project area are principally a Yamac Loam and the range site is a Rolling Loam, which are dominated by a low shrub and grass community. These sagebrush/grass communities are utilized extensively by sheep for meeting forage requirements.

Grazing use by sheep in the Allotment can be authorized from November 1<sup>st</sup> through November 30<sup>th</sup> and April 20<sup>th</sup> through June 15<sup>th</sup>. The proposed action would have some limited impacts during this timeframe while sheep are grazing, in particular during the spring lambing period. This is due to the increased activity associated with the development of the proposed action and temporary decrease in rangelands available for grazing. Impacts to livestock grazing may include such influences as a modification in sheep distribution, increased difficulty in open range lambing, reduction in available forage, and impediments to livestock grazing and movement.

Overall, this individual proposed action would have no direct impact on the authorized Animal Unit Months (AUMs) in the allotments. However, the cumulative impacts from past, present, and possible future oil and gas activities may have a long-term effect on the native range's carrying capacity, thus negatively influencing the authorized AUMs. This possible affect would be determined during the grazing permit renewal process.

*Environmental Consequences of the No Action Alternative:* No impacts would occur under the No Action Alternative.

*Mitigation:* Any livestock control facilities and/or rangeland improvements impacted during this operation will be replaced or repaired to their prior condition.

## VISUAL RESOURCES

*Affected Environment:* These wells are in an area classified as VRM Class 3. VRM Class 3 management allows for development as long as the development does not dominate the new landscape.

*Environmental Consequences of the Proposed Action:* Pipelines will follow existing roads, which will be upgraded, thus visual impacts will be minimal. Drill pads will be new disturbance that will comply with the guidelines for VRM Class 3 with mitigation as listed below.

*Environmental Consequences of the No Action Alternative:* No impacts.

*Mitigation:* Production facilities shall be painted Desert Brown (Munsell Color Chart 10 YR 6/3) or equivalent, to match the surroundings. Areas not needed for production shall be reclaimed in a timely manner.

**CUMULATIVE IMPACTS SUMMARY:** The White River PRMP/FEIS analyzed cumulative impacts of resource-area-wide oil and gas development. Cumulative impacts specific to the proposed action are discussed in the Wildlife Terrestrial and Range Management sections.

**INTERDISCIPLINARY REVIEW:**

<b>Name</b>	<b>Title</b>	<b>Area of Responsibility</b>
Carol Hollowed	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Michael Selle	Archaeologist	Cultural Resources Paleontological Resources
Jed Carling	Rangeland Management Specialist	Invasive, Non-Native Species
Ed Hollowed	Wildlife Biologist	Migratory Birds
Ed Hollowed	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species, Wildlife
Marty O'Mara	Petroleum Engineer	Wastes, Hazardous or Solid
Carol Hollowed	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Ed Hollowed	Wildlife Biologist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Carol Hollowed	Hydrologist	Soils
Jed Carling	Rangeland Specialist	Vegetation
Scott Pavey	Planning and Environmental Coordinator	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Bob Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Jed Carling	Rangeland Management Specialist	Rangeland Management
Penny Brown	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Max McCoy	NRS	Visual Resources
Max McCoy	NRS	Wild Horses

# **Finding of No Significant Impact/Decision Record (FONSI/DR)**

**CO-110-2004-019-EA**

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE:** The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

**DECISION/RATIONALE:** It is my decision to approve the development of Wells #36-21D and 36-22 as described in the proposed action, with the mitigation measures listed below. This development, with mitigation, is consistent with the decisions in the White River ROD/RMP, and environmental impacts will be minimal.

## **MITIGATION MEASURES:**

1. To reduce adverse energetic and physiological influences associated with big game avoidance and displacement during the late winter period, and consistent with TBI-BLM agreements, this pad should be constructed and the 2 associated wells be drilled and prepared for production outside the late winter period of January 1 to April 31.
2. The applicant will spread water on road surfaces to control fugitive dust.
3. The isolated find shall be avoided by all well pad construction and maintenance activity. Also:
4. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:
  - whether the materials appear eligible for the National Register of Historic Places
  - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
  - a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are

correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

5. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

6. Use Standard Seed Mix #2 for reclamation.

7. The permit holder is required to control noxious weeds resulting from construction and use activities. Application of herbicides must be under field supervision of an EPA-certified pesticide applicator. Herbicides must be registered by the EPA and application proposals must be approved by the BLM.

8. Efforts need to be made to keep sediment from leaving the site with the use of best management practices designed to retain sediment. Re-vegetate the un-used portion of the well pads as soon as possible, and place gravel on areas that will not be re-vegetated.

9. When preparing the site, all suitable topsoil should be stripped from the surface of the location and stockpiled for reclamation once the location is abandoned. If well becomes a producing well, the topsoil pile will need to be seeded to reduce wind and water erosion. When topsoil is stockpiled on slopes exceeding five percent, construct a berm or trench below the stockpile.

10. All sediment control structures or disposal pits will be designed to contain a 100-year, 6-hour storm event. Storage volumes within these structures will have a design life of 25 years.

11. All activity shall cease when soils or road surfaces become saturated to a depth of three inches unless otherwise approved by the Authorized Officer.

12. Provide vegetative or artificial stabilization of cut and fill slopes in the design process. Avoid establishment of vegetation where it inhibits drainage from the road surface or where it restricts safety or maintenance.

13. Eliminate undesirable berms that retard normal surface runoff.

14. The operator shall be required to collect and properly dispose of any solid wastes generated by this project.

15. Water bars or dikes shall be constructed on all of the rights-of-way, and across the full width of the disturbed area, as directed by the authorized officer.

16. Slopes within the disturbed area shall be stabilized by non-vegetative practices designed to hold the soil in place and minimize erosion. Vegetative cover shall be reestablished to increase infiltration and provide additional protection from erosion.

17. When erosion is anticipated, sediment barriers shall be constructed to slow runoff, allow deposition of sediment, and prevent it from leaving the site. In addition, straining or filtration mechanisms may also contribute to sediment removal from runoff

18. All exposed outcrops of the bedrock formation must be inventoried by a BLM approved paleontologist and a report detailing findings and any recommended mitigation shall be submitted to the BLM prior to the initiation of construction. A monitor shall be present at all times when excavating into the underlying bedrock strata when building the road, burying the well-tie pipeline and excavating the reserve/blooiie pit. If paleontological materials (fossils) are uncovered during project activities, the operator is to immediately stop activities that might further disturb such materials, and contact the authorized officer (AO). The operator and the authorized officer will consult and determine the best option for avoiding or mitigating paleontological site damage.

19. Any livestock control facilities and/or rangeland improvements impacted during this operation will be replaced or repaired to their prior condition.

20. Production facilities shall be painted Desert Brown (Munsell Color Chart 10 YR 6/3) or equivalent, to match the surroundings. Areas not needed for production shall be reclaimed in a timely manner.

NAME OF PREPARER:

*Max McCoy*

NAME OF ENVIRONMENTAL COORDINATOR:

*Scott Perry*

SIGNATURE OF AUTHORIZED OFFICIAL:

*Deanne Dhall*

*Deanne* Field Manager

DATE SIGNED:

*1/7/04*

ATTACHMENTS:

- 1) Memorandum of Agreement on TBI Drilling Program
- 2) Map of the Location of the Proposed Action

*Memorandum*

*To: Max McCoy*

*From: Ed Hollowed*

*Subject: TBI 2004 drilling program*

*Date: 10/1/03*

*Based on site visits conducted on September 23 and 30, 2003 and acting on discussions from our last coordination meeting, BLM has determined that the following proposed wells would be acceptable for a winter drilling regimen (i.e., from January 1 through February 29, 2004). As discussed in this meeting, BLM's identification and/or offering of these wells for late winter drilling is made with the intent of setting back scheduled drilling/completion and pipeline construction/installation activity on these severe winter ranges until May 1, 2004 (drastically reducing energy development during important early spring timeframes, March 1 through April 30).*

*36-11*

*36-11BD*

*25-42B*

*25-31*

*25-21*

*25-12B*

*29-41*

*6-11D*

*36-14B (fee/fee)*

*25-43 (fee/fee)*

*These wells include 3 of the top 5 priority new wells proposed in TBI's 2004 WRD drilling program.*

*Activity deferral on winter range is applicable to all federal wells. The inclusion of fee/fee wells in this discussion is made in hopes that TBI will consider honoring deer winter range provisions on fee/fee lands within the Unit. Because access and activity associated with the development of fee wells would affect adjacent and intermingled federal lands, deer winter range issues are not relegated to federal lands. Drilling/completion and pipeline construction operations that continue through the late winter and early spring period on fee lands would generally tend to negate our efforts at minimizing extraneous energy demands on deer in the Unit.*

*BLM would like to emphasize that all proposed wells, particularly those that are not identified above, are available for development as long as the drilling/completion of wells and installation of pipelines are anticipated to be complete prior to 1 January 2004.*

*In the interest of minimizing road expansion and long-term reductions in the sagebrush forage base, the BLM wildlife biologist will recommend that proposed well 30-41B (i.e., 20-acre infill well) be directionally drilled from the existing M30 location (600' distant). This would be BLM's third proposal for offset drilling in the interest of maintaining wildlife habitat values in the Ant Hills Unit.*

# Location of Proposed Action CO-110-2004-019-EA

